

POND CREEK BRIDGE

Pennsylvania Historic Bridges Recording Project - II  
Spanning Pond Creek at Bear Lake Rd. (State Rt. 2016)  
Thornhurst vic.  
Lackawanna County  
Pennsylvania

HAER No. PA-499

HAER  
PA  
35-THORN.V  
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD

National Park Service  
1849 C Street, NW  
Washington, DC 20240

HISTORIC AMERICAN ENGINEERING RECORD

POND CREEK BRIDGE

HAER No. PA-499

HAER  
PA  
35-THORNY  
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Location: Spanning Pond Creek at Bear Lake Rd. (State Rt. 2016), Thornhurst vicinity, Lackawanna County, Pennsylvania.

USGS Quadrangle: Thornhurst, Pennsylvania (7.5-minute series, 1983).

UTM Coordinates: 18/448105/4562810

Date of Construction: 1938.

Designer: Pennsylvania Department of Highways.

Builder: Pennsylvania Department of Highways, co-sponsored by U.S. Works Progress Administration (WPA).

Present Owner: Pennsylvania Department of Transportation.

Present Use: Vehicular bridge.

Significance: This structure is an excellent example of a WPA-sponsored project because of its well-preserved condition and undisturbed setting, where it spans Pond Creek on a rural road just outside of Lackawanna State Forest. The parapet walls of this 12'-0"-long, skew stone arch bridge display careful rustic craftsmanship and an interesting mix of identifying marks. Designed by a state highway department, constructed with local labor, and paid for by the WPA, it reflects the involvement of government at all levels of the project during the Great Depression.

Historian: Justin M. Spivey, August 1998.

Project Description: The Pennsylvania Historic Bridges Recording Project - II was co-sponsored during the summer of 1998 by HABS/HAER under the general direction of E. Blaine Cliver, Chief; the Pennsylvania Department of Transportation, Bureau of Environmental Quality, Wayne W. Kober, Director; and the Pennsylvania Historical and Museum Commission, Brent D. Glass, Executive Director and State Historic Preservation Officer. The fieldwork, measured

drawings, historical reports and photographs were prepared under the direction of Eric DeLony, Chief of HAER.

## Introduction

Because of its high percentage of urban population and its manufacturing-driven economy, Pennsylvania was particularly hard-hit by the Great Depression that followed the stock market crash of 1929. By 1930, Pennsylvania had the third highest unemployment rate of any American state.<sup>1</sup> Prosperity in the northeastern portion of the state, particularly Lackawanna and Luzerne counties, had been built upon extractive industries: mining coal and iron ore. The withering demand for coal and steel left a large segment of the population jobless.

Some of Lackawanna County's unemployed men supplemented their relief income by laboring on the projects of the Works Progress Administration (WPA), a federal public works agency created in 1935, during the first administration of President Franklin D. Roosevelt. A majority of WPA-sponsored projects were "bricks and mortar": improving roads, installing sidewalks, and constructing everything from drainage ditches to entire airports. Workers also performed tasks as diverse as cleaning schools and organizing local records. Nationwide, WPA-sponsored crews upgraded 572,000 miles of rural roads and built 78,000 new bridges.<sup>2</sup> In Lackawanna County alone, \$8.1 million was spent on a "Highway Betterment Program" between 1935 and 1938.<sup>3</sup>

Among these statistics is a 12'-long skew stone arch bridge built by WPA-sponsored workers on Legislative Route 665 (now State Route 2016), just outside the Lackawanna State Forest, in 1938. This small structure has roots in all three levels of American government: constructed with local hand labor, designed by a state agency, and paid for with federal funds. Although it is one of many WPA-built structures in Lackawanna County, this bridge is distinguished by its unusual range of rustic craftsmanship, well-preserved condition, and unaltered setting.

## Works Progress Administration

Roosevelt responded to the Depression by asking Congress to pass a number of emergency spending bills, collectively called the "New Deal." The bills created an "alphabet soup" of government agencies working to reinvigorate the United States' economy and provide

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<sup>1</sup> Thomas H. Coode and John F. Bauman, *People, Poverty, and Politics: Pennsylvanians During the New Deal* (Lewisburg, Pa.: Bucknell Univ. Press, 1981), 14-15.

<sup>2</sup> Roger Biles, *A New Deal for the American People* (DeKalb: Northern Illinois Univ. Press, 1991), 107.

<sup>3</sup> U.S. Works Progress Administration, "Final Project Financial Status Report," 22 December 1938, Pennsylvania Highway Betterment Program for Lackawanna County, Office Project File No. 465-23-1-50, Record Group 69, National Archives, Washington D.C.

relief to the unemployed. Among the most visible was the Public Works Administration, created by the National Industrial Recovery Act of 1933 and directed by Secretary of the Interior Harold L. Ickes. Ickes favored "massive construction projects" to aid and inspire private-sector recovery.<sup>4</sup>

Disappointed by the results of the first New Deal, Roosevelt called for a second round of legislation in 1935. The first spending bill of his Second New Deal, the Emergency Relief Appropriation Act, created the Works Progress Administration (WPA). Harry Hopkins, chosen to head the new agency, advocated smaller construction projects and spending on wages instead of materials.<sup>5</sup> Hopkins' justification, as revealed to one author, was the federal government's precedent of "direct responsibility to the people," established by decades of subsidizing transportation and public works.<sup>6</sup> In his mind, the only difference was sending wages directly to the workers instead of paying construction costs or giving land to railroads. To track how government funds were actually spent, "military-trained engineers filled the administrative ranks of the WPA," setting up a hierarchy of project foremen, district supervisors, and state administrators.<sup>7</sup>

Public opinion of the WPA was mixed. A 1939 survey identified it as both the New Deal's "greatest accomplishment" and its "worst thing." When the United States showed signs of recovery in 1937, the WPA cut its payroll in half. But a second stock market crash in 1938 doubled the WPA's ranks again, to three million laborers.<sup>8</sup> The bridge at Pond Creek was built during this resurgence in federal public works spending.

### **"Highway Betterment"**

The WPA's accepted proposals for projects sponsored by state and local agencies and sent funds directly to the sponsors. Fortunately, project files were microfilmed in their entirety by the WPA before it disbanded in 1943. Project proposals can still be found in the National Archives. Although many WPA-sponsored road projects have general titles and locations encompassing a number of routes in a county, improvements to L.R. 665 at first received their own project number.

In October 1935, the Pennsylvania Department of Highways submitted its first proposal for "widening, draining and stabilizing Road Surface Route 665 between Station 0+00 and

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<sup>4</sup> Biles, *A New Deal*, 44-5, 78.

<sup>5</sup> Biles, *A New Deal*, 104-5.

<sup>6</sup> Hallie Flanagan, "WPA Spending," in *The New Deal: A Documentary History*, ed. William E. Leuchtenburg (Columbia, S.C.: Univ. of South Carolina Press, 1968), 73.

<sup>7</sup> Coode and Bauman, *People, Poverty, and Politics*, 167.

<sup>8</sup> Biles, *A New Deal*, 114-5.

Station 293+20.<sup>9</sup> Given the small budget (just over \$100,000) for 5.55 miles of road, with 80 percent for labor, this was probably the WPA's typical "pounding rocks into shoulders."<sup>10</sup> The WPA later revisited this segment of road, straightening it according to plans prepared by the department in 1937.<sup>11</sup> The bridge over Pond Creek was constructed the following year.

Despite the WPA's best efforts to track how sponsors spent funds, the Pennsylvania Department of Highways' proposals became increasingly vague over the years. Although the WPA was supposed to supply only labor, with materials coming from sponsors, the WPA paid at least a portion of both for the highway improvements in Lackawanna County. Early lists of materials gave quantities of cement, sand, and lime separately; later proposals specified a quantity of concrete; and eventually hundreds of thousands of dollars simply for "Materials." One 1936 proposal even contained a \$4200 appropriation for right-of-way purchases.<sup>12</sup> Similarly, the Department of Highways lumped road improvements formerly described as "elimination of hazards," "removal of slides," or "improvements to drainage" into the general category of "highway betterment," often for sums of millions of dollars. The 1939 appropriation alone totaled \$3.3 million. Evidently WPA district director Thomas F. Kennedy gained approval for large sums spent on unspecified improvements. Though the Department of Highways may have proved its ability to effectively manage projects, WPA opponents accused the agency's state director Edward N. Jones and his successor, J. Banks Hudson, of "running Pennsylvania's WPA along political lines" for the benefit of the Democratic party.<sup>13</sup>

It is impossible to single out the Pond Creek Bridge from the Department of Highways' later project proposals. A number of proposals list quantities of stone masonry but do not explain its use. The only indication of the structure in WPA records is a number of 12'-0"-long

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<sup>9</sup> U.S. Works Progress Administration, "Project Proposal," 6 October 1935, Pennsylvania Highway Betterment Program for Lackawanna County, Office Project File No. 65-23-1293, Record Group 69, National Archives, Washington D.C.

<sup>10</sup> James Howley, fire warden for Lackawanna State Forest, indicated that WPA laborers pounded rocks into road shoulders throughout Lackawanna County to stabilize them. Telephone conversation with author, July 1998.

<sup>11</sup> Pennsylvania Department of Highways, "Drawings for Construction and Condemnation of Right of Way, Route No. 665 Section No. 1 in Lackawanna County," 17 December 1937, aperture card files, PennDOT District 4-0, Dunmore, Pa.

<sup>12</sup> U.S. Works Progress Administration, "Project Proposal — Supplement No. 1," 22 January 1936, Pennsylvania Highway Betterment Program for Lackawanna County, Office Project File No. 65-23-1293, Record Group 69, National Archives, Washington D.C.

<sup>13</sup> Coode and Bauman, *People, Poverty, and Politics*, 168-70.

bridges listed in a progress report.<sup>14</sup> Four such spans were listed as complete and another three in progress in mid-1938.

### Lehigh Township

The Pond Creek Bridge is located in forested highlands, near the ridge which divides the Susquehanna and Lehigh River watersheds. This area was part of Luzerne County when Bucks Township was established in 1833 and named after settler Samuel Buck. Early industries included timber and tanning. Financier Jay Gould got his start by establishing a tannery with Zadoch Pratt in 1856 on the Lehigh River in present-day Thornhurst.<sup>15</sup> (As late as the 1930s, Thornhurst was known as the borough of Gouldsboro but another town upriver in Wayne County now bears that name.<sup>16</sup>) Lackawanna County separated from Luzerne to become Pennsylvania's sixty-seventh county in 1878. Two years later, the portion of Bucks Township within Lackawanna was renamed Lehigh. Today, the township is mostly state-owned forest and game lands, with the balance rural and weekend residences.

What was formerly known as Legislative Route 665 is a two-lane state highway between Pittston, in Luzerne County, and Thornhurst, on the banks of the Lehigh River in Lackawanna County. Heading south from Pittston, the road climbs into deeply forested mountain territory and passes through Pleasant View Summit, a cluster of mid-twentieth century weekend cottages. After crossing into Lackawanna County, the road is called Bear Lake Road, after one of the county's largest natural lakes.<sup>17</sup> Pond Creek, the outlet from Bear Lake, flows first into Grassy Pond and passes under the road three times before entering the Lehigh River. The first of these crossings is northeast through the WPA-built bridge. Although Bear Lake Road passes through the Lackawanna State Forest several times, the Pond Creek Bridge is on a peninsula of private property which projects into state land. The bridge retains its deeply forested setting despite a recent subdivision of weekend homes constructed less than half a mile to the southeast.

### Description

The Pond Creek Bridge is marked by two small yet prominent parapet walls along Bear Lake Road. Each parapet is 18'-0" long and 2'-2" wide, and extends about 3 feet above the gravel

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<sup>14</sup> U.S. Works Progress Administration, "Report of Physical Accomplishment," 30 June 1938, Pennsylvania Highway Betterment Program for Lackawanna County, Office Project File No. 165-23-1520, Record Group 69, National Archives, Washington D.C.

<sup>15</sup> Thomas Murphy, *Jubilee History of Lackawanna County, Pennsylvania*, vol. 1 (Indianapolis: Historical Publishing Co., 1928), 536.

<sup>16</sup> Gouldsboro borough is shown in Pennsylvania Department of Highways, "Drawings for Construction." The town of Thornhurst is presently unincorporated.

<sup>17</sup> Murphy, *Jubilee History*, 536. Bear Lake was previously known as Beaver Lake.

shoulder. The overall width including the parapet walls is 41'-0". Because of its 60-degree skew, the bridge's short parapets are visibly out of alignment when viewed from the road. The primary material used in the bridge is a local sandstone (in keeping with the WPA's insistence on using local materials), ranging from light brown to grey in color. Weathered to its natural color, the structure's local stone helps it blend into the surrounding environment. Decorative features are highlighted by relief but not color contrast. Slabs of stone coping, about four and a half to six inches thick and joined by broad bands of coarse mortar, cap the walls.

Inspecting each corner of the parapet walls, one notices that the stone blocks measure only four to eight inches deep. Even the largest blocks, placed at the corners as in traditional solid masonry, do not wrap around to the adjacent face. Clearly this is not a solid stone wall but a veneer. One corner of the parapet, damaged by a collision, reveals a concrete core.<sup>18</sup> Even without this evidence, several documents warrant speculation about the authenticity of the bridge's apparent stone construction. The Pennsylvania Department of Highways' plans for straightening the road specify a concrete arch bridge of 12'-0" span at this location.<sup>19</sup> Furthermore, material lists from project proposals show various quantities of reinforcing steel, indicating that the WPA was using reinforced concrete in the structures it built.<sup>20</sup> Because Depression-era public works projects were intended primarily to give people work, the labor-intensive process of laying up a true stone arch would seem preferable to pouring a reinforced concrete one. Perhaps the Department of Highways, which designed few if any masonry structures, had no specifications for a true stone arch. At any rate, the stone veneer represents a compromise between the Department's need for a modern concrete structure and WPA's mission to use local materials and hand labor.

For such a small span, the Pond Creek Bridge has a surprising number of identifying marks, with three in separate locations. Centered on the inside face of the north parapet wall, long strips of stone projecting slightly from the surrounding veneer are arranged to form twenty-inch-high letters spelling "WPA." On the inside of the south parapet wall, also centered and projecting slightly, is a keystone twenty-four inches tall. The keystone's vertical aspect is somewhat greater than the keystone currently used on Pennsylvania highway signs. Two rows of serif letters carved into the keystone spell out "1938 / PDH," identifying the Pennsylvania Department of Highways as the WPA project sponsor. The date of construction is given in another location, on the southwest wingwall. Incised into a block of stone set flush with the wall at this location is "1938" in blocky sans serif numerals.

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<sup>18</sup> Ed Osnick, environmental manager for PennDOT District 4-0, speculated that the wall may be rubble-filled, instead of stone veneer over concrete. Telephone conversation with author, August 1998.

<sup>19</sup> Pennsylvania Department of Highways, "Drawings for Construction."

<sup>20</sup> U.S. Works Progress Administration, "Project Proposal," 6 October 1935, Pennsylvania Highway Betterment Program for Lackawanna County, Office Project File No. 65-23-1293, Record Group 69, National Archives, Washington D.C.

Another remarkable detail is the pointing of masonry on the bridge. The stones are bonded with a coarse tan cement, which includes pebbles of up to 3/16" diameter. Because the blocks are slightly irregular, this coarse mortar varies considerably in its width. To give the pointing a more consistent appearance, a bead of different mortar 1/16" thick is applied on top of the rougher pointing at a constant width of 1/2". This decorative mortar contains fine white sand, and its overwhelming contrast with the underlying cement produces the illusion of more precisely cut stone. Because the masons on this project were from Lackawanna County, a search for this peculiar technique in other structures may identify an individual craftsman.

Stone work on the spandrel walls is similar to that around the parapets. Voussoirs roughly 18 inches deep lead up to a 24-inch-deep keystone to mark the arch ring. The arch ring springs directly from the invert slab, at which point the intrados is tangent to both wingwalls. As a result, water flowing along either wingwall turns directly into the barrel without encountering a headwall. However, the awkward side effect is an arch ring which tapers to a point at its springing. Inside the arch barrel, even courses of consistently-sized blocks are laid parallel to the arch axis — in other words, a false skew. Rectangular blocks of similar dimension are set on end in the invert slab, giving it an obviously paved appearance. The elliptical barrel is 12'-0" wide (measured on the skew) and 7'-0" tall from spring line to crown. Drawings in the bridge's inspection file show skewbacks 4'-9" deep and an invert slab 3'-0" thick, although these dimensions cannot be easily confirmed.<sup>21</sup>

Each of the four stepped wingwalls diverges from the arch barrel at a 30-degree angle, descending in height from 8'-6" adjacent to the parapet to 4'-9" at the other end. Because of the 60-degree skew, the northeast and southwest wingwalls, each 7'-9" long, are actually perpendicular to the roadway. The southeast and northwest wingwalls measure 12'-6" each. Judging from the mortar parging on the back of the northeast one, all four wingwalls are stone veneer with reinforced concrete backing.<sup>22</sup> The wingwalls are extended both horizontally and vertically with dry-laid unshaped stones, similar to those found in the creek bed. It appears that workers re-arranged stones to smoothly blend the area disturbed by construction into untouched nature, indicating a sensitivity to the structure's relationship with its environment.

## Conclusion

The bridge under Bear Lake Road at Pond Creek, a state-designed project built by the WPA, exemplifies the role of all levels of government in public works during the Great Depression. Its use of local materials and local labor reflects the WPA's primary goal: creating jobs. As a secondary benefit, the agency left behind an improved infrastructure. Yet, among many similar structures, the Pond Creek Bridge's significance comes more from the bridge itself

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<sup>21</sup> Pennsylvania Department of Highways, "Supplementary Bridge Record," BMS No. 35-2016-0040-1992, bridge inspection files, PennDOT District 4-0, Dunmore, Pa.

<sup>22</sup> The parging behind the northeast wing wall is incised with the letters "FAT / CS," perhaps the initials of WPA laborers.



than its historical context. The dichromate pointing and prolific identifying marks distinguish it as a unique example of rustic craftsmanship. Because the Pond Creek Bridge remains in its original setting, it also shows how WPA craftsmen created structures in harmony with rural environments.

## SOURCES CONSULTED

### Published

Biles, Roger. *A New Deal for the American People*. DeKalb: Northern Illinois Univ. Press, 1991.

Coode, Thomas H., and John F. Bauman. *People, Poverty, and Politics: Pennsylvanians During the New Deal*. Lewisburg, Pa.: Bucknell Univ. Press, 1981.

Flanagan, Hallie. "WPA Spending." In *The New Deal: A Documentary History*, ed. William E. Leuchtenburg. Columbia, S.C.: Univ. of South Carolina Press, 1968.

Murphy, Thomas. *Jubilee History of Lackawanna County, Pennsylvania*. Vol. 1. Indianapolis: Historical Publishing Co., 1928.

### Unpublished

Pennsylvania Department of Highways. "Drawings for Construction and Condemnation of Right of Way, Route No. 665 Section No. 1 in Lackawanna County," 17 December 1937, aperture card files, PennDOT District 4-0, Dunmore, Pa.

\_\_\_\_\_. "Supplementary Bridge Record." BMS No. 35-2016-0040-1992, bridge inspection files, PennDOT District 4-0, Dunmore, Pa.

U.S. Works Progress Administration. Pennsylvania Highway Betterment Program for Lackawanna County, 1936. Office Project File No. 65-23-1293, Record Group 69, National Archives, Washington D.C.

\_\_\_\_\_. Pennsylvania Highway Betterment Program for Lackawanna County, 1937. Office Project File No. 165-23-1520, Record Group 69, National Archives, Washington D.C.

\_\_\_\_\_. Pennsylvania Highway Betterment Program for Lackawanna County, 1938. Office Project File No. 465-23-1-50, Record Group 69, National Archives, Washington D.C.